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THE UNPRODUCTIVE FARM.[a]

The American people are prosperous. Labor is all employed at the highest wages paid in our history.

Skill is in demand in all lines of industrial activity.

Capital is increasing and active.

Every industry in the land is extending.

Labor from other lands looks to us and comes to us.

Schools are overflowing.

Our transportation systems, the best in the world, are unable to meet the requirements of commerce.

Our manufacturers more nearly supply home demands than at any time in the past and sell heavily abroad.

The farmer feeds the people as no people ever before were fed and sells in foreign markets a surplus of 1,148 millions of dollars' worth of his products. Prosperity quite up to the average of human success attends intelligent management of farm affairs nowadays. No class of people live better, enjoy life more, or contribute as much to the wealth of the republic. These are the strong things to be said. Syracuse asks us to consider a weak link in the chain—unproductive farms. It is a wise move, and it would have been commendable in every State to make such inquiries at any time during the last century. The call comes late; the evils to be remedied have traveled far in all the States.

The people of the United States have wasted their inheritance of land and woods, of fish in the waters, and minerals in the earth. The soil has been robbed in the East and South and West. We have reached very high prices for farm products; we see a wood famine and very high prices for fuel. Prices of lumber have doubled in less than a decade. This convention has been called to consider decreased productiveness of the soil near great centers of population. Such conventions might well be called in all the States of the Union. They are all soil robbers and wood robbers and water robbers and mine robbers.

There is an awakening everywhere along this line. The Southern States are inquiring; they have grown one crop too long. The newer States of the West are looking into soil deterioration and its remedies; they find that continual drafts on the soil exhaust nature's deposits.

[a] Address of Secretary of Agriculture at the convention called by the Chamber of Commerce, Syracuse, N. Y., October 23, 1907.

Your State has taken the lead in numerous specialties that are successful and profitable under present conditions. You have good farmers here, and many of them, whose methods in dairying, fruit and vegetable growing and other lines have been followed by people beyond your borders.

Good farmers have lived in the past, before colleges were instituted to teach or make research into the sciences of agriculture, but their experiences died with them. The books on agriculture in any library twenty years ago were very few and seldom written by practical and scientific operators. We must not deal too severely with the man who has failed to make his farm profitable in the past, unaided and alone, without school or college or library to help him to better practices. These things are of recent conception, and in many States are only being fairly organized.

The old-fashioned farmer with a thin soil has in most instances fought a good fight. He struggled to educate the young people, whose education led them away from the farm, and left him to struggle alone. Everything taught them had a tendency to turn their eyes toward anything but agriculture for a career. The farmer was tolerated in those days. The developing industries—the factory, the railroad, the forest, and the mine—coaxed the boys away with big pay. The Nation was offering farms of new land for nothing. It gave its mines for the opening and its forests for the cutting, and it protected the factory of every kind, enabling these industries to outbid the farmer when he wanted help. The State encouraged the railway, and its schools furnished forth the youth of the land for every vocation but agriculture. The boys and girls went away, leaving the father and mother with gray hairs on the old acres. The unproductive farm of to-day, in its primitive strength, educated boys and girls who have helped to build up the West and Southwest into great States, and have helped to build up the industries of the Empire State.

EDUCATIONAL.

The Congress, half a century ago, recognized the wisdom of providing for the education of the farmer. Provision was made for an agricultural and mechanical college in each State and Territory, and more recently research into agricultural problems has been provided for. These institutions are making as satisfactory progress along lines of education and research as could have been expected, and rank high among similar enterprises in the world. The young farmer is studying

the sciences of agriculture and the old farmer in many States is being reached and interested. Faculties are being enlarged and strengthened in these colleges and experiment stations. The States are adding materially to the Federal endowment, with the approval and on the request of all classes of citizens.

The farm newspapers of the country are occupying higher positions as educators, their staffs and themes being reinforced from the agricultural colleges. The publications of the experiment stations, dealing with the problems that effect their respective localities, are read and in demand. Vigorous efforts are being made to prepare young farmers for their life work. We have sixty-five land-grant colleges, with ten thousand students of agriculture in attendance. They have funds and equipment amounting to $84,000,000 and annual revenues of $14,500,000.

These colleges are giving us educated men for teaching, writing, superintending, and making research. Each State has an experiment station, where research is made into local conditions of soils, plants, animals, and the manufacture of farm products. These stations are endowed by the Federal Government with $30,000 each annually. They are steadily improving their work. Your College of Agriculture at Cornell, with its 552 students and strong faculty, gives promise of good things to come for your farmers, and your research station at Geneva is attracting attention. The place for New York is at the head in this regard and there are many indications that it will be found there in the near future. Your home institutions are the exemplars for the farm.

The Federal Government authorizes the Department of Agriculture to do things of a general nature. It is a university where the graduates of the State agricultural colleges specialize under scientists of acknowledged proficiency in their lines of work. We have over 9,000 people in the Department, of which number over 2,000 belong to the scientific force, the teaching force.

OUR PUBLICATIONS.

We send out 16,000,000 pieces of farm publications a year, the results of the work of our scientists. Of these, 6,400,000 are Farmers' Bulletins, all of which are for free distribution. The Government sells the publications of all the Departments at cost and 10 per cent added. The people do pay money for what they want. Last year they bought 71,764 documents of the Department of Agriculture, from the Superintendent of Documents, and paid $10,885.20 for them. If

these documents were on sale at the post-offices the people would buy them freely, and I am of the opinion that this would be the correct way to distribute Government publications. The citizen could then buy what he wants, and complaints that much is printed that nobody wants would cease. The demand is now so great for farm matter that we can not print it as it is called for. The Congressmen send out documents, and we learn of the public demand by their requests for more.

AGRICULTURE IN SECONDARY SCHOOLS.

The education of the young farmer has reached the proposition to introduce the study of the elementary sciences of agriculture into the secondary schools. The Southern States are ahead of the Northern in this regard. Alabama and Georgia have organized schools of agriculture in every Congressional district. These schools will be feeders of their agricultural colleges, and will open up to students who go no further opportunities for beginning the study of what pertains to their life work. Several other States are taking steps to educate the young farmer toward the farm in the secondary schools.

NEW CROPS FOR ROTATION.

Systems of rotation are necessary for many reasons. The wheat grower in our northern latitudes finds that wheat refuses to yield profitably after a few years' continued cropping. The nights are too cold to grow corn successfully. Summer fallowing has been resorted to—that is, plowing a season without a crop. He does not know of any legumes that will fit into a system of rotation. Clovers from our lower latitudes would winter kill. We have few grasses, grains, or legumes native to our country. We sent an explorer to northern Europe and Siberia to find suitable clovers, alfalfas and the like for our northern latitudes, and found them on the seventieth parallel in Siberia. We hope to help our northern brethren to annual crops through the introduction of plants from extreme northern latitudes that have hot summers, cold winters, and light rainfalls.

Abuse of the soil is the common practice of all farmers who do not prosper. They are found in all the States, and in all the sections of all the States. If an account were kept with the soil by each owner, crediting the land with what is removed of the several plant foods and charging it with what is given back, farming processes would be reduced to maintaining proper soil conditions and the books would show what has been done to destroy or build up.

SEMIARID LANDS.

One of our great problems is the utilization of our light-rainfall lands west of the one hundredth meridian. The soil is generally good, and, when irrigated, good crops are grown, but we have very many acres that can not be irrigated. They are above the water ditches. The Old World has had the same conditions and has suited plants to them, or, during the ages, plants have suited themselves by developing strains that exist and yield well in light rainfall. We grew 50,000,000 bushels of such wheat in 1906 and more during the present year. Our eastern people are eating this wheat. The semidesert is feeding the East with bread, and will do so more and more in the future as our explorers find cereals, grasses, and legumes that are at home in light rainfall. We have large areas of land that have not enough moisture to fully develop plant life. The thickly populated countries of the Old World begin at the sources of the streams and build reservoirs to hold water against times of drought. This is particularly necessary on thin soils. It will be done in our country before many years. Capital would be remuneratively employed now in building dams in some parts of your State.

THE PASTURE.

The pasture is the exponent of the farm. It should have growing in it all the grasses and legumes suitable to the soil and climate. No one plant makes a good pasture, because each plant has its season for blooming, after which it is not a good grazing plant. Where half a dozen grasses and as many legumes grow together, each is at its best for grazing in its own time. Young grasses and legumes are nature's perfect ration for domestic animals. Milk and meat and work are had more cheaply from the pasture than from other sources. You will observe that pasture land increases as farm help becomes scarce. Mutton sheep are suggested when labor is dear. Cultivated crops reduce organic matter in the soil and render it unfit for profitable crop growing. Pasturing replaces organic matter. Barnyard manure will replace organic matter as far as it goes, but there is never enough of it. When good crops of grain or roots are wanted, the pasture, plowed and reduced in season, is the best place to get them. Western farmers in the corn belt get their heavy crops from pasture land. The organic matter from the pasture enables the soil to resist drought and furnishes plant food for the growing crop as no commercial fertilizer will. There are few first-rate pastures anywhere. You will catch

good farmers napping in this respect oftener than in any other feature of the farm.

PAPER AND ALCOHOL.

Some radical changes in our industries are imminent. The farmer will furnish the raw material for making paper very soon. It will be corn stalks, cotton stalks, flax, straw, hemp, ramie, or perhaps some plant yet to be found abroad. He will also soon grow plants to furnish heat, light, and power. Vegetables, fruits, grains, etc., will be the raw material. Fuel is scarce in many localities. It is entirely practicable for a farmer to grow on small space potatoes sufficient to make alcohol to give heat, light, and power for all farm uses. Or it can be done with sugar beets. This is likely to become an industry in the West or Southwest where vegetables can not be transported long distances, as alcohol can be. Potatoes are a profitable crop near large cities in the Eastern States. The West can grow them in any quantities at low cost for consumption near the field. The Department of Agriculture is inquiring into sources of alcohol and methods of using it.

In 1906 the farmers grew sugar beets enough to make 483,000 tons of beet sugar, which, with the 272,000 tons of cane sugar made in Louisiana and Texas, is enough to supply the entire population west of the Mississippi River, and something over. In 1906 we grew 800,000,000 pounds of rice, substantially enough to supply home demand. It is the farmer's privilege to grow everything the people need that our soils will produce.

FORESTS.

Our total sales of forest products to foreign countries last year were $92,952,099. Increase of prices indicates that we must pay more for wood, and the rate at which we use wood at home, sell it abroad, and destroy it by fire suggests that it will be much dearer in future, and that it may be profitably grown on our lighter soils and on lands not well adapted to cultivation.

Our forests are rapidly vanishing. The United States Government is trying to save 160,000,000 acres for present and future use. It is regrettable that this policy did not begin fifty years ago. Fires could have been prevented, young trees saved, and many million acres of primitive woodlands, North and South, that are now of little value for agricultural purposes might be yielding an annual harvest and continue to do so for all future time. The world is dividing with us what we have left, while we are importing varieties that are almost extinct

at home. Our imports of wood products are steadily increasing and will continue to increase. We paid $26,145,716 more for them last year than in 1905. Low-priced lands planted with young trees suitable to the conditions are likely to pay. The life of valuable trees is long compared with other crops, but short compared with the life of a nation. Some of the trees whose products are common in commerce are 500 years old. They grow to useful size in seventy-five years. The softer woods are fit for use in twenty-five years, and thin, gravelly, or rocky soils should be planted with trees of some kind. The more rapid-growing woods, when treated by modern methods, can be used for fence posts, railway ties, and without such treatment make the containers that require one-fourth of our annual lumber harvest. The National Forests of the far Northwest are very grand, and grow mostly on soils that would not yield farm crops of any kind profitably. The tree subjects rocky soils to its uses, and gets its food by disintegrating the rocks that would yield plant food on no other terms. I have seen 300,000 feet of lumber, board measure, growing on an acre of land which, were the trees removed, would not pasture a sheep through any known method of management. There are such lands in many of our States that should be planted with trees. Nature would do that if time were given her and man did not interfere.

THE PROGRESSIVE FARMER.

With the help of improved machinery, the progressive individual farmer is producing much more than the average farmer did a generation ago, and men of this class are keeping up the productive qualities of their farms. They observe certain principles of farm management; they do not sell fodders or roughage; they keep live stock and grow feed for them; they sell animals and their products, fruits, vegetables, etc. As long as the pioneer on virgin soils grows wheat at prices that have been current, the progressive farmer grows little or none. He keeps improved stock that respond to their keeping and that put on the greatest per cent of meat on the prime parts. He puts all manure promptly on the fields.

He rotates his crops.

He tile-drains his lands.

He keeps up good fences.

He has good pastures.

He has a good garden.

He breeds draft horses and does farm work with brood mares and growing colts.

He has a library with periodicals and standard works, and a musical instrument.

He helps his wife in the house when she needs it, has a spring vehicle for her to visit in, and drives her to church himself.

He keeps dairy cows or mutton sheep, or both.

THE SOIL.

The Nation is interested in the soil and its crops. Shall we meet the demand for more cotton, or shall it be grown in the valleys of the Nile and the Congo? The soil will answer. Shall we grow wheat for our increasing population or shall we import from Canada? Soil conditions will determine. Is meat to be found on the tables of our working people in the future, or will the price be beyond their reach? Ask the question of the soil.

The causes of the decrease of farm values in the Eastern and Middle States are mainly changed economic conditions which render unprofitable some of the older staple crops, and the necessity is apparent for a change in the system of agriculture to rehabilitate the unoccupied farms and to increase the financial returns from the soil. The soils of New York and New England, by reason of their origin and topography, are different from other soils in the United States. They are not well adapted to the older staple crops under present economic conditions, but are particularly adapted to special crops and special industries which the newer economic conditions will now make exceedingly profitable.

Soil surveys should be extended as rapidly as possible to give the people a correct idea of the resources of the whole country. The special crops to which these soils are peculiarly adapted with due regard to economic and market conditions must be demonstrated to the people to the end that utilization be realized to the fullest extent.

These neglected lands can be brought back to their primitive fruitfulness and no doubt will be. They are the cheapest lands I know of anywhere in the country. It can only be necessary to call the attention of people wanting homes who have saved some capital from their earnings, or young men of some means who have tastes for the independence of country life, to the possibilities connected with these lands. Good Government land in the humid section has been taken up. Lands being reclaimed by irrigation are desirable, but they are remote from great centers of population. The lands we are discussing are here, at your doors, within hearing of factory whistles and school bells, within sight of college and church spires, and only need intelligent management to return paying harvests.

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